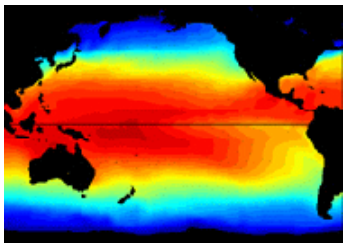
Climate Program Office

Understand climate variability and change to enhance society's ability to plan and respond

CPO coordinates NOAA's contribution to international climate and ozone assessments.



CPO climate observations monitor and document sea surface temperature.

CPO provides climate-based decision support tools for water resource management.

Global Drifter 1250 was deployed in waters off Halifax, Nova Scotia on September 18, 2005, bringing the global surface drifting buoy array to its design goal.

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What does NOAA's Climate Program Office do for the nation?

NOAA's Climate Program Office (CPO) provides the nation with climate services and information for better management of our energy, agriculture, water, and living marine resources, through observations, analyses and predictions, and sustained user interaction. Services include assessments and predictions of climate change and variability on timescales ranging from weeks to decades. A key component of the CPO is the large focus on extramural and competitive research.

- **Program and Planning Division**: leads strategic planning and performance measure development and supports NOAA's involvement in the interagency Climate Change Science Program (CCSP), which guides Federal climate change research efforts.
- **Research Programs Division**: supports improved understanding and modeling of ocean, atmosphere and land-surface processes to advance NOAA's operational climate forecasts, monitoring, and analysis systems. This includes development of climate-based hydrological forecasting capabilities, decision support tools for water resource applications, and improving understanding of climate forcing processes (e.g. carbon cycle, aerosol-climate interactions).
- **Climate Observation Division**: documents ocean carbon sources and sinks, ocean storage and global transport of heat and fresh water, ocean-atmosphere exchange of heat and fresh water, and long term trends in sea level changes. Key observing components include the Argo Program and the Arctic Program. NOAA supports the global ocean observing system with contributions from 65 other countries and three other US agencies. NOAA's contributions are accomplished at 19 laboratories, centers, and cooperative institutes, with system organization and management centered at the CPO Office of Climate Observation.
- **Climate Assessments and Services Division**: facilitates and supports interdisciplinary activities focused on connecting the expertise of the Earth science enterprise with decision makers who manage risks and resources. The Division includes Regional Integrated Sciences and Assessments, the Sectoral Applications Research Program, the NOAA Climate Transition Program, and education and outreach activities. It also includes projects: RAdio InterNET for the Communication of Hydro-Meteorological Information for Rural Development (RANET) project.

Recent Accomplishments:

- **Advancement of the Global Ocean Observing System past 50% and deployment of Global Drifter 1250:** In cooperation with interagency and international partners, NOAA advanced the Global Ocean Observing System past the 50% milestone in February 2005. In September 2005, NOAA deployed Global Drifter 1250 near Halifax, Nova Scotia, bringing the global surface drifting buoy array to its design goal of 1250 data buoys in sustained service. **Payoffs: the ocean observing system is fundamental to the detection and attribution of climate variability and change, and improved climate forecasts.**

- **Observing Monsoons to Improve Predictions:** NOAA successfully completed the North American Monsoon Experiment (NAME) field campaign in collaboration with other US, Mexican and Central American agencies and academic institutions. NAME is sponsored by the Climate Predictions and Projections for the Americas Program under the Research Programs Division. **Payoffs: NAME will improve plans for monitoring and predicting the North American monsoon, generate a more comprehensive understanding of North American summer climate variability and predictability, strengthen scientific collaboration across Pan-America, and improve predictions of North American summer precipitation months to seasons in advance.**
- **Decadal Changes of Carbon Dynamics in the Atlantic and Pacific Oceans:** Climate Variability, an Office of Climate Observation sponsored program, has found that uptake of carbon emitted from human activities (e.g. burning of fossil fuels for energy production) by the North Atlantic during the past decade has been lower than uptake by the North Pacific. The 1995/1996 phase shift of the North Atlantic Oscillation from positive to negative may have changed the depth of mixing of the top-most layer of the ocean and thus changed carbon uptake. The program is jointly sponsored by NOAA and the National Science Foundation, with contributions from the National Aeronautics and Space Administration and the Department of Energy**. Payoff: A better understanding of the role of the oceans in mitigating the increasing levels of carbon dioxide in the atmosphere will improve climate change predictions.**
- **Meeting regional climate information needs:** Regional Integrated Sciences and Assessment teams are working to meet climate information needs in the U.S. This matrix-model program has been highlighted in congressional reports as an outstanding example of how best to assess stakeholder needs and to develop research insights and tools to match those needs. **Payoffs: delivering climate information at regional, state and local levels helps address the nation's needs in critical social and economic sectors such as water resources management, farming and ranching, wildfire prevention, fisheries management, human health, and disaster mitigation.**

What's next for CPO?

Goal for 2012 is to increase our predictive capability over a range of time-scales (intraseasonal to decadal and beyond) and improved attribution of observed (20th century) climate variability and change that will enable us to provide NOAA customers (e.g. farmers, utilities, land managers, business owners, energy, re-insurance, weather risk industry, fisheries resource managers and decision makers) with assessments of current and future impacts of regional to global climate events such as major droughts, floods, long-term climate trends, and trends in extreme climate events. This will be accomplished through integrated observing systems, regional monitoring of carbon cycle, improved understanding of cloud and aerosol processes, ocean-atmosphere coupled climate forecast systems with higher resolution, integrated drought information, and improved understanding of warming in the Arctic.

Budget and Staff

The fiscal year 2006 enacted budget for CPO is $110.6M. The fiscal year 2007 President's budget request for CPO is $125.7M. CPO currently has 99 permanent Federal employees.

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